IN THE CLAIMS:

1. (Currently Amended) A robust scalable eye-safe laser system comprising:

a plurality of laser fibers, said laser fibers including double-clad Er:YAG laser resonators;

a high-power laser pump source coupled to each of said laser fibers; and

an external cavity having an optical axis, and beam-flattening optics characterized by a hexagonal geometry for flattening individual Gaussian-like TEM_{00} beams into top hat laser beams and forming a combined beam symbolized by a random phase and amplitude multiple beam profile, said external cavity having a first lens, a single aperture, a second lens and a mirror located along the optical axis, said single aperture being of predetermined diameter and being located at focal points of the first and the second lenses.

2 – 4. (Canceled)

5. (Previously Presented) The laser system of Claim 1 wherein each of said high-power laser pump sources include a laser diode.

6. (Previously Presented) The laser system of Claim 1 wherein said pump sources are end-coupled via pigtails or discrete imaging optics.

7. (Previously Presented) The laser system of Claim 1 wherein said pump sources are side coupled, edge coupled, fusion coupled, and/or coupled via a reflective cavity.

8. (Previously Presented) The laser system of Claim 1 wherein laser fibers with differing lengths differ in length from one another by more than 1.5 centimeters.

9. (Canceled)

10. (Previously Presented) The laser system of Claim 8 wherein said cavity incorporates a diffractive mode feedback selector.

11. (Previously Presented) The laser system of Claim 8 wherein said cavity incorporates a free space propagation distance.

12 – 15. (Canceled)

16. (Previously Presented) The laser system of Claim 1 wherein said laser fibers include integrated reflectors.

17. (Original) The laser system of Claim 16 wherein said integrated reflectors include distributed Bragg reflectors.

18 – 20. (Canceled)

21. (Currently Amended) The laser system of Claim ~~20~~ 17 wherein said plural pump sources include diodes.

22. (Canceled)

23. (Currently Amended) The laser system of Claim ~~22~~ 1 wherein said laser fibers include cores that are sufficiently different in length to facilitate longitudinal mode overlap among beams traveling along different cores.

24. (Previously Presented) The laser system of Claim 21 wherein said plural pump sources include a diode emitter array for each of said plurality of laser fibers.

25. (Canceled)

26. (Previously Presented) The laser system of Claim 24 further including a clad end-pumping configuration for coupling each diode emitter array to a corresponding laser fiber.

27. (Previously Presented) The laser system of Claim 26 wherein said clad end-pumping configuration includes discrete imaging optics for imaging output beams from each diode emitter array into each laser fiber.

28. (Original) The laser system of Claim 24 wherein said diode emitter array is adapted to transmit at wavelengths of approximately 1.5 microns.

29. (Currently Amended) A beam phase-locking system comprising:

first means for receiving plural single-mode beams of electromagnetic energy and providing flat-top beams as output in response thereto; and

second means for combining said flat-top beams via spatial filtering and providing a collimated combined beam in response thereto, said first means including multiple fiber laser oscillators having integrated Bragg grating mirrors, said fiber laser oscillators including Er-doped YAG crystal (Er:YAG) resonator cores, said integrated Bragg grating mirrors representing a first end of a spatial filter included in said second means, and said spatial filter including beam flattening optics characterized by a hexagonal geometry, a collimating lens pair having a first collimating lens and a second collimating lens and a single aperture of predetermined diameter therebetween, and a mirror, the aperture being located at the focal points of the first and the second collimating lenses.

30 – 31. (Canceled)

32. (Currently Amended) The system of Claim ~~31~~ 29 wherein said fiber laser oscillators further include dielectric cladding at least partially surrounding said resonator cores.

33. (Original) The system of Claim 32 wherein said resonator cores are approximately equivalent lengths.

34. (Previously Presented) The system of Claim 32 wherein different length resonator cores are sufficiently different in length to facilitate longitudinal mode overlap among beams traveling along different resonator cores.

35. (Previously Presented) The system of Claim 34 wherein said resonator cores of different lengths differ in length from one another by more than 1.5 centimeters.

36. (Currently Amended) The system of Claim ~~31~~ 29 wherein said Er:YAG resonator cores include YAG crystal doped with less than 0.5% Er molecular concentration.

37. (Currently Amended) The system of Claim ~~31~~ 29 further including means for pumping said fiber laser oscillators.

38. (Original) The system of Claim 37 wherein said means for pumping includes plural diode emitters.

39. (Original) The system of Claim 38 wherein said means for pumping includes one or more pigtail couplers for coupling one or more diode emitters into each fiber laser oscillator.

40. (Original) The system of Claim 37 wherein said means for pumping includes discrete imaging optics for coupling one or more diode emitters into each fiber laser oscillator.

Claims 41 – 42 (Canceled)

43. (Previously Presented) The system of Claim 29 wherein said mirror is positioned adjacent to the second collimating lens and at a second end of said spatial filter, said mirror being partially transmissive.

44. (Previously Presented) The system of Claim 43 wherein said first means includes beam-flattening optics positioned between said Bragg grating mirrors and said first collimating lens.

45 – 73. (Canceled)